

Children's Environmental Health



Birth Defects

14. Selective Birth Defects Rates

Birth defects are the leading cause of infant mortality in the U.S., accounting for almost 20 percent of all infant deaths in 1999.¹ One out of 28 babies (150,000) are born each year in the U.S. with birth defects.² Because some birth defects are not recognized immediately, they are underreported on birth and death certificates, and the overall problem may be underestimated.³ Also, many serious birth defects are not evident until later in life—an additional factor in underreporting.

Birth defects can be caused by genetic, environmental or unknown factors. Several studies have linked exposure to environmental pollutants to an increased risk of birth defects. A 2002 study found that women living in areas with higher levels of ozone and carbon monoxide pollution are three times more likely to have babies with serious birth defects.⁴ Studies have also found higher risk for certain birth defects among those living within 1/4 mile of Superfund sites.⁵ Other studies have linked exposure to certain toxins such as pesticides and mercury with increased risk of birth defects.⁶

In Kentucky, more than 2,100 babies are born each year with some kind of malformation and are the leading cause of infant mortality. Nearly 1 of every 4 infant deaths in the state are caused by congenital anomalies, one of the highest rates in the nation, according to the University of Louisville Birth Defects Center.⁷ The Kentucky Department for Public Health began collecting data on birth defects in 1996. Based on this data, the leading birth defects in Kentucky are heart defects, Hypospadias/Epispadias, Pyloric Stenosis, Cleft Lip and/or Palate and Obstructive Genitourinary Defects.

EQC selected three birth defects to track—neural tube, gastroschisis and cleft lip/palate. It is well recognized that neural tube defects (defects of the brain and spinal cord) may be caused by a number of environmental agents. The incidence of spina bifida has fallen nationwide by two thirds in women with a family history of the condition. Folic acid, known to help prevent spina bifida and other neural tube defects, is now given to all pregnant women. The national estimated rate of neural tube defects is 6 in 10,000 births and deaths.⁸ In Kentucky cases and rates of neural tube defects have declined 55 percent, from a rate of 12.7 per 10,000 births in 1996 to a rate of 5.1 per 10,000 births in 2002.

A rise in gastroschisis in some states, a congenital defect in which the intestines protrude outside the baby's abdomen, have led some scientists to believe environmental and/or drug exposures may be responsible.⁹ Gastroschisis incidence in the U.S is estimated to be 1 case per 10,000.¹⁰ In Kentucky, the 5 year rate for gastroschisis is 4.52 cases per every 10,000 births.

Cleft palate is one of the most common birth defects that occurs worldwide affecting 1 in every 1,000 babies born.¹¹ The 5 year incidence rate of cleft lip/palate in Kentucky is close to double the national rate at 17.58 per 10,000 births or 1 in every 568 births. While the causes of cleft lip/palate are not well understood, studies suggest that a number of genes, smoking, drugs as well as environmental pollutants may be involved.¹² For example, a scientific review that evaluated multiple studies of women's occupational exposure to organic solvents found an increased risk for birth defects such as heart defects and oral cleft defects.¹³

The Kentucky Cabinet for Health and Families birth defect program in the Department for Public Health offers prevention and education services as well as intervention and outbreak monitoring. The program does not conduct epidemiologic research or studies to assess potential links between environmental exposures and birth defects.

Indicator 14. Selective Birth Defect Rates^{endnote}

